immediately and rapidly to the outfall, so that there can be no time for decomposition or generation of gases while passing through the sewer; to effect this, it should be of proper size and gradient, of smooth bore, and laid to true allignment and gradient. It should be so well ventilated that there would be a constant interchange of air from within and without the sewer, so that what gas, if any, might be generated, would be so diluted as to be practically harmless. It should be occasionally flushed, so that no accumulations which might adhere to the sewer from irregular flow would become sufficiently decomposed to generate sewer gas. It should be impervious to water and sewage throughout its length, to preserve the soil from sewage pollution. To recapitulate, the prime essentials of a sanitary sewerage are:

1st. *Immediate*, *rapid* and *complete* removal of sewage beyond the point of danger.

2d. It should prevent the accumulation of noxious gases by sufficient ventilation and proper construction.

3d. It should be susceptible to effectual flushing.

4th. It should be impervious. Any sewer deficient in either of these requisites is a foe to humanity, and should be at once either reconstructed or its use discontinued.

For the "Combined System" the sewers are necessarily made very large; they are usually constructed of brick and of various shapes. The preferable shape is ovoidal, with the smaller end down, as this form provides maximum velocity to the minimum flow. The brick is likely to be more or less rough and porous, causing retardation of flow, accumulations of shiny substances, and organic matters, and soil pollution. In time of severe rain, when the sewer is running full, or nearly full, the excretal matters being in suspension, are left adhering to the sides of the sewer and in the crevices at the joints, and this filth must remain there, decomposing and giving off noxious gases until an equally severe storm comes again to wash this down and deposit a fresh supply of this antidote of health, as the flow recedes.

With each heavy rainfall, there are various substances which pass the catch-basin and form deposits on the bottom of the sewer, causing accumulating obstacles to the flow. By these obstructions, the sewage forms itself into innumerable cess-pools, which, in the dry-weather flow, is unmolested in its natural development of sewer gas and bacteria, jeopardizing the health and life of every inmate in each house with which the sewer is connected. It should be borne in mind that the native heath of bacteria is in just such dark and damp places as this affords. It is the great amount of sewer gas that is thus generated, which makes it next to impossible to sufficiently ventilate such sewers. They can be ventilated, and much external air introduced into the sewer, but not in sufficient quantity to overcome or purify the great volume of gas that accumulates in such sewers. A very great and